NAVY PUBLIC WORKS CENTER
NORFOLK, VIRGINIA
UTILITIES DEPARTMENT

STANDARD OPERATING PROCEDURE / JOB HAZARD ANALYSIS

TITLE

CHANGEOUT PAD TRANSFORMER WATTHOUR METER

PROCEDURE NUMBER

WC 624 HVE 039

DISTR:
Code 601C.3
Code 610.E1
Code 620
Code 622
Code 622.3

SIGNED:_____
(DATE)

APPROVED:_____
(DATE)

SAFETY PROFESSIONAL:_____
(DATE)

MANAGEMENT OFFICIAL:_____
(DATE)

DATE:_____ REVISION DATE:_____

CHANGEOUT PAD TRANSFORMER WATTHOUR METER

Purpose:
Procedure to replace a watthour meter installed on a pad transformer.

Potential Energy Sources:
1. 34.5/11.5/4.16 kv cables and transformer bushings located in high voltage compartment of pad transformer
2. 480Y277, 208Y120, etc. conductors and transformer bushings located in low voltage compartment of pad transformer
3. 480, 277, 208, 120, 240, etc. conductors to meter
4. 480, 277, 208, 120, 240, etc. meter equipment

Tools And PPE:
Tools: Potential tester, and hand tools. PPE: Nomex coveralls, Nomex hood, insulating rubber gloves, insulating rubber sleeves, hard hat, safety shoes, work gloves, safety glasses, orange vest, and back brace if required by back injury prevention and control program. The class of rubber gloves and sleeves will depend on the exposure voltage as per the following: Class 0 - up to 1,000 volts, Class 1 - up to 7,500 volts, Class 2 - up to 17,000 volts, Class 3 - up to 26,500 volts, Class 4 - up to 36,000 volts.

References:
1. PWC Occupational Safety and Health Program Manual, PWCNORVAINST 5100.33E
2. SOP WC 624 HVE 001, Set Up and Secure Bucket/Auger Truck
3. Occupational Safety and Health Standards for General Industry (29 CFR PART 1910): Subpart I, Personnel Protective Equipment; Subpart R, Electrical Power Generation / Transmission / Distribution; Subpart S, Electrical
4. NFPA 70 E approach distances to exposed, energized, electrical conductors and circuit parts.
5. ANSI C2-1987 National Electrical Safety Code
6. SOP WC 622 HVE 013, Deenergization, Lockout, Tagout
7. SOP WC 622 HVE 007, Switchout and Switchback Energized Circuit

Procedures:
1. WC 622 personnel will deenergize the transformer. WC 622 personnel will follow SOPs WC 622 HVE 007, Switchout and Switchback Energized Circuit WC 622 HVE 013, Hazardous Energy Control(Lockout, Tagout)
2. Test the transformer secondary bushings with an voltage tester to verify the transformer is deenergized. If the transformer secondary is 480 volt then wear Nomex coveralls, Nomex hood, insulating rubber gloves, insulating rubber sleeves, safety shoes, hard hat and safety glasses. If the transformer secondary is 300 volts or less avoid contact with conductive part while performing the voltage check. Once the equipment is verified dead, then the personnel PPE will be Nomex coveralls, work gloves, safety shoes, safety glasses, and a hard hats.

3. Remove the old meter.
   a) Remove the meter seal.
   b) Remove the door.

c) Remove the meter using both hands and pulling the meter down and out.

4. Install replacement meter.
a) Prior to placing new meter verify it is a direct replacement by comparing the old and new meter’s class and form designation.
b) Put meter cover back in place.
c) Place a new meter seal.

5. WC 622 personnel will energize the transformer. WC 622 personnel will follow SOPs
WC 622 HVE 007, Switchout and Switchback Energized Circuit
WC 622 HVE 013, Hazardous Energy Control(Lockout, Tagout)

6. Check the meter operation.
Three Phase Meters
a) Check for disk rotation.
b) Check for voltage lights.
c) Check for proper disk rotation as per indicating arrow on the meter.
Single Phase meters
a) Check that the meter is operating.

END